

**From:** Dan Robinette [mailto:[drobinette@prbo.org](mailto:drobinette@prbo.org)]

**Sent:** Friday, October 14, 2005 2:45 PM

**To:** [MLPAComments@resources.ca.gov](mailto:MLPAComments@resources.ca.gov)

**Cc:** 'Julie Lanser'

**Subject:** MLPAComments: MLPA MPA Proposal for the Santa Maria Basin

To Whom It May Concern,

Please accept the attached proposal for a network of MPAs in the Santa Maria Basin. If you have any questions or need additional information, please don't hesitate to contact me.

Sincerely,

Dan Robinette

Dan Robinette  
Vandenberg Seabird Project Manager  
PRBO, Vandenberg Field Station  
205 N. H St. Suite 217  
Lompoc, CA 93436  
(805) 735-7300  
(805) 735-8817 fax  
[drobinette@prbo.org](mailto:drobinette@prbo.org)  
[www.prbo.org](http://www.prbo.org)

# **A Proposal for a Network of Three State Marine Reserves and Two State Marine Conservation Areas in the Santa Maria Basin**

Dan Robinette and Julie Lanser  
Marine Ecology Division, PRBO Conservation Science  
Vandenberg Field Station  
205 North H Street, Suite 217  
Lompoc, CA 93436  
(805) 735-7300, (805) 735-8817 fax

## **Summary**

The objective of this proposal is to establish a network of Marine Protected Areas (MPAs) within the Santa Maria Basin (SMB). The network we propose will be adjacent to Vandenberg Air Force Base (VAFB), an area with a history of receiving little fishing pressure. Our proposed network will therefore protect native species and habits existing in a natural setting. Fish and invertebrate species that will benefit from this MPA network are on state and federal lists of “overfished”, threatened, and endangered species (see lists in the ‘Individual MPAs’ section). Additionally, the MPA network will contain areas that are hot spots for foraging seabirds and marine mammals and will therefore be protecting areas of high trophic transfer.

Creating a network of MPAs in this natural setting will address requirements of the Marine Life Protection Act (MLPA) by protecting the natural diversity and abundance of marine life and helping to sustain, conserve and protect populations of exploited species of the central California coast. Additionally, creating a network of multiple large MPAs across a large stretch of coast (as opposed to creating only one MPA along the same stretch of coast) will help protect the structure, function, and integrity of a coastal marine ecosystem. Furthermore, this network of MPAs help fulfill the requirements of the Marine Mammal Protection Act by protecting critical foraging and haul-out habitat of harbor seals and California sea lions. Finally, it will help fulfill the requirements of the Endangered Species Act by protecting roost and foraging habitat of the California Brown Pelican, breeding and foraging habitat of the California Least Tern, foraging habitat of the California sea otter, and coastal habitat of the Chinook salmon.

## **Setting**

We propose establishing a network of Marine Protected Areas (MPAs) consisting of three State Marine Reserves (SMRs) and two State Marine Conservation Areas (SMCAs) in the SMB under the MLPA. Specifically, the proposed SMRs will be centered at Point Sal, Purisima Point, and Point Arguello (Fig. 1). The SMB, which extends from Point Buchon in the north to Point Conception in the south, resides at the southern end of the of the MPLA’s central California study area. The bottom habitat of this region is primarily soft bottom with varying degrees of hard bottom adjacent to Point Sal, Purisima Point, and Point Arguello. The hard bottom habitats on the leeward sides

of these three points support moderately-sized kelp beds. The intertidal habitat associated with these points is rocky with varying degrees of slope. At Point Sal and Point Arguello, the intertidal habitat is mostly comprised of large rock slabs at the base of steep coastal cliffs. The intertidal habitat at Purisima Point is mainly a broad area of cobble with several large rocks at the tip of the point. The intertidal habitat between the points is mostly sandy beach. The MPAs we are proposing will thus support a variety of habitats including hard and soft bottoms and kelp beds.

The SMB is a high energy area where intense coastal upwelling occurs, especially in the waters between Point Arguello and Point Conception. These waters also represent a convergence area where currents flowing equatorward in the SMB collide with currents flowing poleward out of the Southern California Bight. Because of this, the SMB has received recent attention within the physical oceanography community (see Dever 2004, Ohashi and Wang 2004, and Dong and Oey 2005). However, there is still much to be learned about the biological consequences of these oceanographic conditions.

Equatorward flow in the SMB is disrupted by Point Sal, Purisima Point, and Point Arguello. Of these promontories, Point Arguello is the largest, followed by Point Sal and Purisima Point. Recent research has shown waters on the leeward sides of coastal promontories provide refuge for larvae of fish and invertebrate species against offshore transport during upwelling events (Wing et al. 1998). Thus, these habitats are unique because they have the potential to enhance recruitment to fish and invertebrate populations.

The MPAs we are proposing will be located along the coastal boundary of Vandenberg Air Force Base (VAFB). This stretch of the central California coast supports approximately 1,800 breeding seabirds and provides roost and haul-out habitat for several thousand seabirds and marine mammals. Furthermore, Purisima Point provides breeding habitat for the endangered California Least Tern (*Sterna antillarum browni*) and all three promontories provide vital roosting habitat for the endangered California Brown Pelican (*Pelecanus occidentalis californicus*). The kelp beds found on the leeward sides of these promontories provide critical habitat for the endangered California sea otter (*Enhydra lutris*). The total fisheries catch within state waters for this area (both fish and invertebrate based on the California Department of Fish And Game's Commercial Fisheries Information System (CFIS) data for 1999-2004) is less than three percent of that for the entire central California MLPA study area. Thus, the socio-economic impacts of establishing these MPAs will be minimal. Additionally, public access to VAFB is restricted and VAFB has a resident game warden. Thus, enforcement of these MPAs will require little additional effort by the state.

By establishing MPAs around Point Sal, Purisima Point, and Point Arguello, the state will be creating a network of refuges aimed at protecting important seabird and marine mammal populations and the food-webs that support them. Additionally, the proposed MPAs will vary in size from 42-100 km<sup>2</sup> and level of protection (SMR versus SMCA), allowing scientists to answer questions about the efficacy of differently sized and designated MPAs centered around different sized coastal promontories. Finally, potential sources of major human impacts in this area are rocket launches from VAFB and oil spills from offshore oil drilling activities. Establishing three SMRs will provide at least one baseline of comparison should the local area be affected by a catastrophic event such as an oil spill or failed rocket launch.

## **The Proposal**

### ***Process Used to Develop the Proposal***

This proposal was developed using a combination of unpublished data on the area as well as unpublished reports and published scientific literature of the SMB and central California coast. Dan Robinette and Julie Lanser (PRBO Conservation Science, Vandenberg Field Station) compiled the information found within this document.

### ***Unpublished Data***

Commercial Fisheries Information System (CFIS) data for 1999-2004. Requested from California Department of Fish and Game, Marine Region GIS Lab.

PRBO Conservation Science unpublished data on seabird and marine mammal populations utilizing the coastal habitat adjacent to Vandenberg Air Force Base.

### ***Unpublished Reports***

Brown, A., D. Robinette, N. Collier, and W.J. Sydeman. 2001. Population studies and foraging ecology of seabirds at Vandenberg Air Force Base, 2001. Unpublished Report, PRBO Conservation Science, Stinson Beach, CA.

Collier, N., D. Robinette, and W.J. Sydeman. 2002. Brown Pelican roost utilization along the coastal margin of Vandenberg Air Force Base, January 1995 through December 1995, December 1999 through December 2000, and February 2001 through January 2002. Unpublished Report, Point Reyes Bird Observatory, Stinson Beach, CA.

Robinette, D.P. and E.A. Rogan. 2005. Monitoring and management of the California Least Tern colony at Purisima Point, Vandenberg Air Force Base, 2004. Unpublished Report, PRBO Conservation Science, Stinson Beach, CA.

### ***Published Literature***

Wing, S.R., L.W. Botsford, S.V. Ralston, and J.L. Largier. 1998. Meroplanktonic distribution and circulation in a coastal retention zone of the northern California upwelling system. *Limnol. Oceanogr.* 43(7): 1710-1721.

Dever, E.P. 2004. Objective maps of near-surface flow states near Point Conception, California. *J. Phys. Oceanogr.* 34: 444-461.

Ohashi, K. and D.-P. Wang. 2004 Circulation in the Santa Maria Basin, California, during 1998. J. Geophys. Res., 109, C11012, doi:10.1029/2004JC002362.

Dong, C. and L.-Y Oey. 2005. Sensitivity of coastal currents near Point Conception to forcing by three different winds: ECMWF, COAMPS, and blended SSM/I-ECMWF-Buoy winds. J. Phys. Oceanogr. 35: 1229-1244.

### ***Gap Analysis***

There are two existing MPAs within the SMB: Pismo-Oceano Beach SMCA and Vandenberg SMR (Fig. 1). The Pismo-Oceano Beach SMCA consists solely of soft bottom habitat and prohibits the take of clams. No other organisms or habitats are protected by this MPA. The Vandenberg SMR contains a mixture of hard and soft bottom habitats (though predominately soft bottom) and is a 'No Take' reserve, prohibiting the take of all marine species.

The majority of the hard bottom habitat in the SMB occurs adjacent to VAFB and is not protected by MPAs. Additionally, the kelp bed habitat in waters leeward of Point Sal, Purisima Point, and the Point Arguello Promontory are not protected by MPAs. Finally, there are no replicates for the Vandenberg SMR in the SMB. Our proposed network of MPAs will 1) protect the majority of hard bottom habitat in the SMB, 2) protect the unique habitats on the leeward sides of Point Sal, Purisima Point, and the Point Arguello Promontory, and 3) provide replicates for scientific study.

### ***Regional Goals and Objectives***

The overall goals and objectives of establishing a network of MPAs in the SMB are as follows:

- 1) To preserve the native marine species and habitats of the central California coast in their natural settings.
- 2) To protect the limited hard bottom and kelp bed habitat found within the SMB.
- 3) To protect critical seabird breeding, roosting, and foraging habitat.
- 4) To protect critical marine mammal haul-out and foraging habitat.
- 5) To protect the threatened and endangered marine species utilizing the SMB, including the Chinook salmon, the California sea otter, the California Brown Pelican, and the California Least Tern.
- 6) To develop a network of differently sized and designated (i.e., SMR versus SMCA) MPAs to allow for scientific analysis of the efficacy of MPA establishment.
- 7) To develop protected areas to serve as baselines of comparison in the unfortunate event of an oil spill or other catastrophic event.

## **Individual MPAs**

### ***Point Sal State Marine Reserve (Fig. 1)***

The Point Sal SMR will protect vital habitat for commercially important fish and invertebrate species as well as the top predators that prey on them. The existing Point Sal State Beach and the adjacent large offshore rock (Lion Rock) provide vital roost/haul-out habitat for hundreds of endangered Brown Pelicans in addition to hundreds of Brandt's and Pelagic Cormorants, Western Gulls, and California sea lions. The sandy beaches along the southern section of coast provide roosting habitat for hundreds of Heerman's Gulls. The kelp beds found in waters leeward of the point provide critical habitat for foraging California sea otters. Large foraging flocks consisting of the pelicans, cormorants, and gulls mentioned above as well as Sooty Shearwaters, Pacific Loons, Western Grebes, California Sea Lions, and bottlenose and common dolphins occur in this area as well. The total commercial fish and invertebrate catch within state waters (3 nm) in this area (CFIS data 1999-2004) represented 0.18% of that for the MLPA central California study region.

Boundaries: Mussel Rock (north) to Lion's Head (south) and offshore to 3 nm

Area: 55 km<sup>2</sup>

Shoreline Length: 11 km

Expand Upon Existing MPA?: NO

Overall Goal of MPA: To protect critical seabird and marine mammal roost/haul-out habitat and to protect the prey of seabirds and marine mammals foraging in this area.

Species that will benefit from SMR establishment:

#### *Seabirds*

- California Brown Pelican
- Brandt's Cormorant
- Double-crested Cormorant
- Pelagic Cormorant
- Heerman's Gull
- Western Gull
- Pacific Loon
- Western Grebe
- Sooty Shearwater

#### *Marine Mammals*

- California sea lion
- California sea otter
- bottlenose dolphin
- common dolphin

#### *Fishes*

##### Sharks and Rays

- shovelnose guitarfish
- Pacific angel shark
- southern shark
- thresher shark

### Bony Fishes

- cabezon
- kelp greenling
- California halibut
- lingcod
- rockfish (black, blackgill, blue bocaccio, brown, chilipepper, China, copper, cowcod, darkblotched, gopher, grass, greenspotted, kelp, olive, starry, treefish, vermilion, widow, yellowtail, black-and-yellow)
- sablefish
- Chinook salmon
- Pacific sardine
- scorpionfish
- white seabass
- sole (English, Dover, petrale, rex, sand)
- barred surfperch
- swordfish
- thornyheads
- tuna (albacore, bluefin)

### *Invertebrates*

- Dungeness crab
- rock crab
- spider crab
- California spiny lobster
- ridgeback prawn
- spotted prawn
- Pacific Ocean shrimp
- market squid
- Kellett's whelk

### ***Purisima Point State Marine Reserve and State Marine Conservation Area (Fig. 1)***

The Purisima Point SMR and SMCA will protect vital habitat for commercially important fish and invertebrate species as well as the top predators that prey on them. The area from Seal Beach to Lompoc Landing is a popular recreational fish spot that we propose to keep open to recreational fishing but closed to all other activities (i.e., designate as a SMCA). The area from Seal Beach to San Antonio Creek should be closed to all activities (i.e., designate as a SMR).

The dune habitat adjacent to Purisima Point provides critical nesting habitat for approximately 160 endangered California Least Terns. These birds have been observed foraging in waters from San Antonio Creek in the north to Lompoc Landing in the south. Important prey for these terns include northern anchovies, juvenile cabezon, and juvenile rockfish. The coastal cliffs south of Purisima Point provide nesting habitat for approximately 120 Pigeon Guillemots and the rocky shores provide nesting habitat for 4 Black Oystercatchers. The point itself provides vital roost/haul-out habitat for hundreds of endangered Brown Pelicans in addition to hundreds of Brandt's, Double-crested, and Pelagic Cormorants, California Gulls, Heerman's Gulls, Western Gulls, and harbor seals.

The point also provides important foraging habitat for thousands of shorebirds including Black Oystercatchers, Black-bellied Plovers, Surfbirds, Sanderlings, Whimbrels, Wandering Tattlers, Black and Ruddy Turnstones and Spotted Sandpipers. The kelp beds found in waters leeward of the point provide critical foraging habitat for California sea otters. Large foraging flocks consisting of the pelicans, cormorants, and gulls mentioned above as well as Sooty Shearwaters, Pacific Loons, Western Grebes, California Sea Lions, and bottlenose and common dolphins occur in waters on both sides of the point. The total commercial fish and invertebrate catch within state waters (3 nm) in this area (CFIS data 1999-2004) represented 1.51% of that for the MPA central California study region.

#### Boundaries

*SMR*: San Antonio Creek mouth (north) to Seal Beach (south) and offshore to 3 nm.

*SMCA*: Seal Beach (north) to Lompoc Landing (south) and offshore to 3 nm.

#### Area

*SMR*: 42 km<sup>2</sup>

*SMCA*: 15 km<sup>2</sup>

#### Shoreline Length

*SMR*: 8 km

*SMCA*: 3 km

#### Expand Upon Existing MPA?: NO

Overall Goal of MPA: To protect critical seabird breeding habitat, to protect critical seabird and marine mammal roost/haul-out habitat, and to protect the prey of seabirds and marine mammals foraging in this area.

#### Species that will benefit from SMR and SMCA establishment:

##### *Seabirds*

- California Brown Pelican
- California Least Tern
- Pigeon Guillemot
- Brandt's Cormorant
- Pelagic Cormorant
- Double-crested Cormorant
- California Gull
- Heerman's Gull
- Western Gull
- Sooty Shearwater
- Pacific Loon
- Western Grebe
- Black Oystercatcher
- Black-bellied Plover
- Surfbird
- Sanderling
- Whimbrel
- Wandering Tattler
- Black Turnstone



Ruddy Turnstone  
Spotted Sandpiper

*Marine Mammals*

California sea lion  
California sea otter  
harbor seal  
bottlenose dolphin  
common dolphin

*Fishes*

Sharks and Rays

shovelnose guitarfish  
Pacific angel shark  
soupfin shark  
thresher shark  
shortfin mako  
spiny dogfish

Bony Fishes

northern anchovy  
cabezon  
kelp greenling  
California halibut  
lingcod  
rockfish (bank, black, blackgill, blue bocaccio, brown, canary, chilipepper, China, copper, darkblotched, gopher, grass, green striped, kelp, olive, treefish, vermilion, yellowtail, black-and-yellow)  
sablefish  
sanddab (Pacific, speckled, longfin)  
Chinook salmon  
Pacific sardine  
white seabass  
sole (English, Dover, petrale, rex, sand)  
barred surfperch  
thornyheads  
tuna (albacore, bluefin)

*Invertebrates*

Dungeness crab  
rock crab  
spider crab  
California spiny lobster  
ridgeback prawn  
spotted prawn  
red urchin  
market squid  
Kellet's whelk

***Arguello Promontory State Marine Reserve and Boathouse State Marine Conservation Area (Fig. 1)***

The Arguello Promontory consists of four major points: Point Pedernales, Point Arguello, and North and South Rocky Points. Currently, the Vandenberg State Marine Reserve extends from Point Pedernales to just east of South Rocky Point and offshore to a depth of 60 ft. The Arguello Promontory SMR is the largest of the MPAs we are proposing. Within the SMR, the wharf area associated with the VAFB Boathouse is a popular recreational fishing and diving spot as well as a training area for search and rescue groups. The wharf also provides a docking area where rocket parts can be delivered to VAFB. Therefore, we would like to designate the waters adjacent to the Boathouse as a SMCA open to the activities listed above.

The Arguello Promontory SMR and Boathouse SMCA will protect vital habitat for commercially important fish and invertebrate species as well as the top predators that prey on them. The cliffs and rocky shores of this area provide critical nesting habitat for approximately 1,100 Pigeon Guillemots, 120 Pelagic Cormorants, 130 Brandt's Cormorants, 18 Black Oystercatchers, and 80 Western Gulls. The cliffs and numerous offshore rocks provide vital roost/haul-out habitat for hundreds of endangered Brown Pelicans in addition to hundreds of Brandt's, Double-crested, and Pelagic Cormorants, Heerman's Gulls, Western Gulls, California sea lions, and harbor seals. The kelp beds found in waters leeward of the promontory provide critical foraging habitat for California sea otters. Large foraging flocks consisting of the pelicans, cormorants, and gulls mentioned above as well as Sooty Shearwaters, Pacific Loons, Western Grebes, California Sea Lions, and bottlenose and common dolphins occur in waters on both sides of the point. The softbottom habitat surrounding the promontory attracts hundreds of foraging Surf Scoters and numerous foraging California gray whales. The total commercial fish and invertebrate catch within state waters (3 nm) in this area (CFIS data 1999-2004) represented 0.92% of that for the MLPA central California study region.

Boundaries

*SMR*: Point Pedernales (north) to Sudden Canyon (south) and offshore to 3 nm.

*SMCA*: a 3.7 km<sup>2</sup> area extending 1.0 km south and 3.5 km east of the Boathouse jetty.

Area

*SMR*: 42 km<sup>2</sup>

*SMCA*: 3.7 km<sup>2</sup>

Shoreline Length

*SMR*: 14 km

*SMCA*: 4 km

Expand Upon Existing MPA?: YES

Overall Goal of MPA: To protect critical seabird breeding habitat, to protect critical seabird and marine mammal roost/haul-out habitat, and to protect the prey of seabirds and marine mammals foraging in this area.

Species that will benefit from SMR and SMCA establishment:

*Seabirds*

California Brown Pelican

Pigeon Guillemot

Brandt's Cormorant  
Pelagic Cormorant  
Double-crested Cormorant  
California Gull  
Heerman's Gull  
Western Gull  
Sooty Shearwater  
Pacific Loon  
Western Grebe  
Black Oystercatcher  
Surf Scoter

*Marine Mammals*

California sea lion  
California sea otter  
harbor seal  
bottlenose dolphin  
common dolphin  
California gray whale

*Fishes*

Sharks and Rays

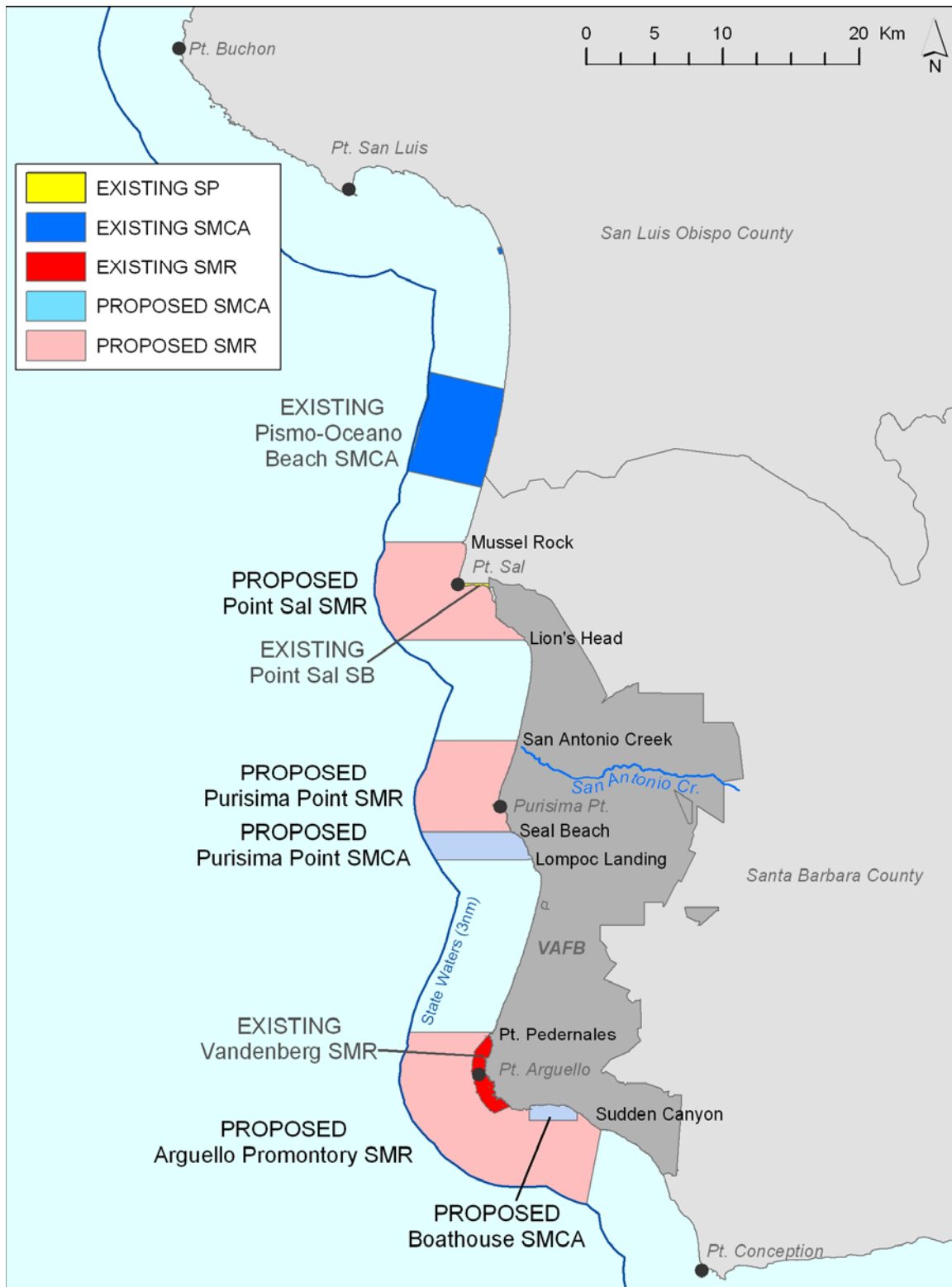
shovelnose guitarfish  
Pacific angel shark  
soupfin shark  
thresher shark  
shortfin mako  
spiny dogfish

Bony Fishes

northern anchovy  
cabezon  
kelp greenling  
California halibut  
lingcod  
rockfish (bank, blackgill, blue bocaccio, brown, chilipepper, China, copper,  
cowcod, darkblotched, gopher, grass, greenspotted, kelp, olive, redbanded,  
splitnose, treefish, vermilion, black-and-yellow)  
sablefish  
sanddab (Pacific, speckled, longfin)  
Chinook salmon  
Pacific sardine  
scorpionfish  
white seabass  
sole (English, Dover, petrale, rex, sand)  
barred surfperch  
swordfish  
thornyheads  
tuna (albacore, bluefin)

*Invertebrates*

Dungeness crab  
rock crab  
spider crab  
California spiny lobster  
ridgeback prawn  
spotted prawn  
Pacific Ocean shrimp  
market squid  
Kellet's whelk



**Figure 1:** Map of the Santa Maria Basin showing existing and proposed MPAs as well as landmarks mentioned within this document.